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SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

Volume 41 SATURDAY, FEBRUARY 23, 1935 Number 1052

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THE DEVELOPMENT AND USE OF EDUCATIONAL MOTION PICTURES IN NEW YORK CITY[1]

By PAUL B. MANN

HEAD OF BIOLOGY DEPARTMENT, EVANDER CHILDS HIGH SCHOOL, AND ASSOCIATE IN EDUCATION, AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK CITY

TEN years ago the educator, Mahaffey, said:

> There is a sleeping giant in education that is just beginning to awaken. When he is fully aroused and his tremendous power is put in action there will be the greatest revolution in educational procedure that the world has yet known. Visual education is this sleeping giant. Just now he is beginning to stir and with his full awakening will come a new era in education that will be more far-reaching in its effect on civilization than is now conceivable.

A glance at progressive cities in the United States reveals this giant now awake and active. In New York City educators have long believed in visual education. In 1880, Dr. Albert Bickmore, then director of the American Museum of Natural History, developed courses of stereopticon lectures for teachers. It was soon evident that the public at large wanted to see "Bickmore slides" and the board of education of the city arranged public lectures under the auspices of Dr. Leipziger. This movement grew to include lectures by prominent individuals and continued until recently, when it was dropped because of competition from radio and professional motion pictures.

About 1919 motion pictures began to be used for purely educational purposes. Dr. Ernest Crandall, then director of visual education for New York City, obtained annual appropriations amounting in some years to as much as $40,000, a considerable portion of which was definitely used in experimenting with the motion picture film as an educational device. Professional films were attracting millions to moving picture shows. Could not educational films have as definite advantages for classroom instruction? At this time most producers were not interested in the possibilities in classroom use of films. Films were being turned out faster than one could review them, but they were distinctly for professional use. Any educational possibilities were but a corollary to the main proposition of turning films into money. So it was necessary to appoint a committee to examine current films and to suggest alterations to make them a usable tool for teachers.

Courses of study were built up from the best films available to correlate with the school curricula. Films were reviewed and adapted to school needs where that was possible. For instance, the Life of Louis Pasteur, a superb film but much too long

[1] Presented at the First International Conference on Educational Cinematography, held in Rome, Italy, from April 19 to 24, 1934, to which conference Mr. Mann was one of the seven delegates from the United States.

for the use of American school children, was reviewed, cut from five reels to two and edited, by the permission of the French authorities, for use in schools in the United States. Practical experience showed that two reels were the maximum possible to be shown in a forty-five minute period and that every factor in the showing had to go along smoothly if the two reels were accomplished in that time. Pedagogically speaking, it frequently proved too much of an attempt because film sometimes breaks, an operator is late or something else interferes.

As time went on, commercial firms, such as Kirkman's Soap, the Ford Automobile Company, the American Sugar Company and others, put out films of distinct educational value, usually distributed free of cost to the schools. The fact, however, that such films bore the name of the company, or contained references which might be construed as advertising, definitely restricted the classroom use of these films.

The American Museum of Natural History, under the generous and capable leadership of the present director, Dr. George H. Sherwood, for many years had been showing natural history films to visiting teachers and classes at the museum, and had also sent such films out to schools free of charge. This film service of the American Museum has been maintained to the present time, and its utilization by constantly increasing numbers of teachers signifies the appreciation of the users.

At first, 35 mm film was the only size available. Its inflammable character involved official precautions which greatly restricted the use of motion pictures in schools, particularly in the classroom. A metal booth of approved construction was necessary, permits from the department of electricity, water and gas had to be obtained, and only a licensed operator could be employed and at unionized wages. The first booth of this character in a high school in New York City, possibly the first in any of the schools of that municipality, was placed in one of our biology department classrooms in Evander Childs High School. For a long time this was the only high school thus equipped for classroom projection. Later a few other high schools obtained such an outfit, but in most schools where films were shown the permanent booth installed in the auditorium was used. This would have served the purpose very well, except that the large numbers of pupils attending the average New York City high school (10,000 in some high schools), compelled the school authorities to use the large auditorium as a study room every period in the day. The problem, then, was whether the auditorium should be restricted to the large numbers assigned to study there, or whether these pupils should give up their study period and join special groups sent there to get motion picture instruction. Would the gain of the special groups offset the loss of the regular students? Many principals decided in the negative, and thus the educational use of motion pictures, except for assembly purposes, was still further restricted.

During this experimental period the Visual Instruction Bureau rented films, a policy which many felt to be costly. The neighboring city of Newark, with a much smaller expenditure, had built up a remarkable library of available films and was operating on a much smaller per-capita cost. A committee which studied the Newark plan reported unanimously that the time had come to buy instead of rent film. About this time the 16 mm film appeared on the market. It was on non-inflammable stock, cost one quarter of the 35 mm film, was less bulky, but—most important of all—could be operated by any one and shown by a projector which could be taken from classroom to classroom. Even a pupil could carry and operate it, and with no red tape for license and fees. A portable

screen and projector cost less than $200. Motion pictures were to be available on a broad basis like text-books.

There is no question that the 16 mm film has come to stay and is solving most of the motion picture film problems which formerly faced the progressive teacher. But its advent has created a demand which, strange to say, film manufacturers have been somewhat slow to satisfy. A few far-seeing companies like the Eastman, Erpi, Bray Pictures Corporation, U. F. A. Films, Inc., and others, have instituted educational departments and are attempting with more or less success to produce films primarily for use in schools. Those made by Erpi are sound films only. Some of the films made by these companies have proved to be particularly successful. Others by the same company, because of pioneering difficulties or other problems, are less valuable from a pedagogical standpoint. An example of an exceptionally valuable film among the many good films prepared by the Eastman Company is that on "Digestion and the Digestive Tract." Yet the same concern has put out a film on "Teeth and Oral Hygiene" which many regard as outstandingly poor for classroom use. There is almost no motion in it except from mechanical movement of models. It is an abortive attempt to make a motion picture out of a subject intrinsically static. Charts and actual models would serve a better purpose in the classroom than such a film. This only goes to show that one can not select a motion picture from a catalogue or even from the film titles and be confident of the character of the film.

In the five years since 16 mm films have had official recognition in New York City various plans have been devised to meet the new situation. The use of 33 mm films except for assembly programs has been abandoned, and beginning in 1932 extensive purchases of 16 mm film have been made. The film library thus purchased by New York City and distributed through the main office of the Bureau of Visual Instruction now amounts to nearly 1,000 reels (February, 1934). Instead of having films distributed by this office alone, various additional sub-centers have been established in the offices of several of the district superintendents. Thus seven sub-centers are provided with nearly 400 additional films rotating among a given number of schools located near each center. During the school year ending in June, 1933, over 25 per cent. of the more than 350 elementary schools of New York City were provided with regular weekly film service. These films consisted of "material correlated with the course of study and organized at the beginning of the term plan of the individual school." Teacher's outlines, analyzing each film, go out with the film to the school.

New film groupings have been developed until now there are available ten complete courses of films correlated with regular school instruction. These consist of:

I.	Geography	5A—17	different	titles	of	films
II.	"	5B—21	"	"	"	"
III.	"	6A—23	"	"	"	"
IV.	"	7B—21	"	"	"	"
V.	Nature study 5th year	—17	"	"	"	"
VI.	Geography	8A—24	"	"	"	"
VII.	Nature study 6th year	—19	"	"	"	"
VIII.	Health education, 6th, 7th, 8th yrs.	—22	"	"	"	"
IX.	Biology Junior H. S.	—38	"	"	"	"
X.	Science Junior H. S.	—26	"	"	"	"

The present appropriation of $30,700 for the Bureau of Visual Instruction is expended in the purchase of films, lantern slides, still film, film strip, 16 mm projectors, stereopticons and screens; also equipment for the upkeep of the service, such as re-winders, splicers, cement, bulbs for projectors, etc.

As fast as funds allow, the Bureau of Visual Instruction provides the following minimum equipment for elementary schools:

(a) One 16 mm motion picture projector
(b) One beaded screen
(c) One stereopticon
(d) One opaque classroom screen
(e) One set of lantern slides correlated with the course of study in one subject.

During the year 1933, the Bureau of Visual Instruction standardized 65 schools with this equipment. An excellent method for purchasing material has been established. Twice annually, manufacturers of films, projectors, screens and accessories demonstrate samples of their newest products and apparatus. A committee of experienced teachers views and evaluates these items, and the material approved is listed on the "Approved List of Visual Aids" from which the Bureau of Visual Instruction makes its purchases.

Films have been used at different times for special "drives," publicity campaigns and other intensive work. For instance, a particular film on oral hygiene, accompanied by a well-qualified speaker, was available for all schools upon request. An excellent and even cheerful film on tuberculosis—also with a speaker—is continually available for schools upon application to the Bureau of Tuberculosis Prevention. In connection with safety education the Annual Report of the Bureau of Visual Instruction of New York City in June, 1933, has this to say:

A special project of Visual Instruction in Safety Education was again undertaken in cooperation with Dr. Herbert Stack, Supervisor of Child Safety Activities of the National Bureau of Casualty and Surety Underwriters. Instead of reaching a large number of schools through many District Superintendents, as was done last year, the Visual Instruction Safety Education unit, consisting of posters, slides and a film, was intensively used in eighteen schools. This allowed each school to keep the material long enough to provide opportunity for real work. As a result approximately 12,000 children were reached and made definitely "safety conscious."

This last fall six film lessons to correlate with a new course in "Industries and Occupations" were introduced. Special films—"The End of the Road" and "The Gift of Life"—have been intensively used in some high schools in presenting personal and race hygiene, including certain phases of sex education. These films are shown to girls and boys in separate groups. A committee is now selecting films to constitute a course in vocational guidance.

Each teacher using films from the Bureau of Visual Instruction is required to make an official report on the physical condition of each film, its suitability for the grade using it, and any language difficulties in titles, also to submit questions or projects possible to be developed from the film. This report is made in duplicate, one copy for the Bureau of Visual Instruction and one for the school.

At times groups of teachers are brought together for the presentation of a lesson involving visual aids and subsequent discussion of correct methods indicated. In this way all the teachers in the group become conscious of the importance of studying the use of visual aids.

Many suggestions of great importance to teachers have been issued in mimeographed form by the Bureau of Visual Instruction. Miss Rita Hochheimer, assistant director of the Bureau of Visual Instruction, has several times given a half year course in visual education. The American Museum of Natural History has in recent years offered two courses without fee. "The Mechanics of Visual Education" is a laboratory course given by Mr. Wales Holden and involves the mastery of a detailed knowledge of visual apparatus. The other is "The Pedagogy of Visual Education," in charge of Mrs. Grace F. Ramsey. Both courses are constantly oversubscribed. The Board

of Education of New York City gives official credit for these courses.

The high schools also have a special library of films adapted to the needs of science and hygiene, and these are distributed to the biology and the health education departments, through eight sub-centers and to general science departments through fourteen sub-centers. Each school served is responsible for collecting and returning films to each local sub-center. The distribution of biology films began in 1933 and that of general science in 1934.

To a limited extent excellent educational films have been produced in part or entirety by amateurs among the teachers. Dr. George C. Wood wrote the scenarios for four of the most successful films ever used in biology instruction. In a recent national contest Dr. Charles Gramet[2] won honorable mention with a film showing biology instruction with microscopes in the John Adams High School, New York City. The speaker has used a Filmo camera for years.

In addition to films procurable from sub-centers both in elementary and high schools, the American Museum of Natural History has continued its extensive film service. The demand for 16 mm films from the public schools of New York City and elsewhere has increased to such an extent that the film division could fill comparatively few of the requests received. Yet in 1933, 27,160 reels were lent by the American Museum and projected in 56,174 showings to audiences totaling 9,012,628 young people.

Are there no dangers in the extensive use of educational films? There are always dangers in the use of anything which requires technical and delicate procedure. Without careful preparation for the film presentation, thoughtful questions analyzing it and definite follow-up work, there is every likelihood that some apparently enthusiastic teachers may be welcoming films as surcease from more uninteresting classroom work. Films have their definite category and limitations. They are not so valuable as charts or lantern slides for views in which motion is not fundamentally a part, and we should be courageous enough to insist upon the proper medium for the purpose in hand. Let me refer to some of these limitations.

(1) In the pioneer stage through which all educational motion pictures are passing, we can not always be sure that the film synchronizes with and truly illumines the subject-matter of our courses. Some of our best films do, but many do not.

(2) When the film is not tied up closely with the lesson of the day or with related lessons, it becomes mere entertainment of doubtful value.

(3) In every community motion picture recitals of extraordinary scenes are shown daily, and so children expect thrills from every film they see. Since the educational film has not kept pace with the commercial film and could not and should not contain the exciting events of professional truth and hocum, children are not, *a priori*, interested simply because they are scheduled to have "movies" in the classroom.

(4) Many teachers take their part lightly and do not prepare for the showing as carefully as commercial houses who can not afford to have failures.

(5) The "shots" pass so rapidly that there is little time for pupils to gather the significant facts unless the teacher has intelligently prepared the class for the particular showing, and unless the captions are edited from a pedagogical standpoint. Where there is so much motion in scenes entirely new to the child the main thing to be emphasized may be lost in the mass of details.

(6) The advent of sound motion pictures for the public renders the silent film less attractive from the standpoint of the

[2] Dr. Gramet's film was shown in Rome and London.

pupil in school. The high cost (over $1,000) for installation of a sound film apparatus makes most schools dependent upon ordinary film.

Unless through various devices self-activity is stimulated (this is frequently not the case where educational pictures are used), learning is not self-initiated and loses purposefulness.

In spite of all these limitations the fact remains that the impressions of the eye are about 60 per cent. more vivid than those of the ear. Eighty-one psychologists and educators agree that visual experiences have contributed 40 per cent. of our vocabulary, auditory experiences have contributed 25 per cent., and all the others together only 35 per cent. We are naturally eye-minded, and the direct appeal of motion pictures is based on sound psychology.

Many experiments have been conducted in the United States to ascertain whether motion pictures are a valuable aid to the teaching profession.

In 1923 Skinner and Rich made remarkable experiments in determinating the efficacy of visual aids in geography instruction, control classes being used. Among their findings were the following conclusions:

(1) The retention of information is increased significantly by the use of stereographs and lantern slides, and is *increased about as much more by the use of motion pictures.*

(2) The use of visual aids produces a decided interest and liking for the subject, makes pupils consider geography less difficult, and preserves better decorum in the class.

(3) There is little or no risk of harm to the pupils' vision through the use of visual aids.

Another investigator, Dr. Weber, through extensive experiments in New York City, proved that selected motion pictures invariably increase the effectiveness of lessons through greater ease of comprehension and therefore a greater degree of satisfaction. The effectiveness of four exclusive methods of learning, in which Weber used about 250 pupils of 7a grade, is shown by the following table:

Being instructed orally	48.62	points
Studying the printed page	49.22	"
Viewing the film silently	50.34	"
Viewing the film with oral comment	52.55	"

Weber also concluded that since visual aids provide vicarious experience, their value increases up to a certain point with lack of experience on the part of the learners. Consequently, the more limited a child's training or experience, such as is the case of low IQ pupils, the greater may be the effectiveness of the film or other aid.

Mr. Rowland Rogers, of Columbia University, concluded from similar experiments conducted in Connecticut that there is a definite reduction of over 6.2 per cent. in the time spent on a given topic. He states: "The average time of learning a considerable portion of the information gained in the schools can be cut materially, possibly in half, and the results be equal if not better, when properly constructed motion pictures are used."

The general results and conclusions obtained by these three researches were confirmed in an experiment as yet unpublished, conducted recently by Miss Sylvester and Dr. Mathewson in classes of the New York City school of which Miss Sylvester is principal.

The most recent and one of the most conclusive studies on the educational values of films (in this case sound films were used), was reported in 1932 by P. J. Rulon, of Harvard University. Using over 3,000 pupils and their teachers from three cities in the state of Massachusetts, in controlled groups, he found that the teaching by sound film was 20.5 per cent. more effective

in immediate responses, and 38.5 per cent. better in retention of facts than similar teaching without the film.

All this means that the motion picture is bound to be recognized, not alone by progressive teachers, but by the rank and file as one of the most valuable educational contributions from modern science. It paints in colors where before were bare facts, it invites interest, it stimulates responses. It can take its rightful position, however, only when its particular technique is mastered, its unique advantages utilized and its limitations understood. Lord Bryce in "Modern Democracies" said of reading that it "is merely a gate leading into the field of knowledge, or an implement which the hand can use for evil, or for good, or leave unused." So this newest of devices, the motion picture, in and of itself affords no educational salvation. Interpreted, used with skill and discernment, it can energize the adolescent mind as no other medium can.

EDUCATIONAL EVENTS

THE SUMMER SCHOOL AT THE UNIVERSITY OF HAWAII

SEVERAL prominent men in education from the United States and China will join the faculty of the University of Hawaii summer session, which will be held in Honolulu from June 24 to August 2.

Dr. Clyde M. Hill, head of the department of education of the University of California; Dr. Jack W. Dunlap, of Fordham University, an editor of the *Journal of Educational Psychology;* Dr. Samuel Burkhard, of the Arizona State Teachers College, and Dr. Robert Ray Scott, formerly of West Virginia Wesleyan College, will conduct courses in teacher training.

Dr. Robert J. Kerner and Dr. Benjamin H. Lehman, both of the University of California, will instruct classes in history and literature. Dr. Reid L. McClung, dean of the University of Southern California College of Commerce, will join the economics faculty. Dr. Albert W. Palmer, the president of the Chicago Theological Seminary, will teach public speaking, and Dr. Roswell H. Johnson, social hygiene specialist, who was formerly on the faculty of the University of Pittsburgh, will give courses in eugenics. Millard Sheets, of Scripps College, artist, will instruct art classes, and Harry Carr, special writer for the *Los Angeles Times,* will give instruction in journalism. From China will come Dr. Y. C. Yang, the president of Soochow University and a member of many official Chinese missions to the United States and Great Britain. He will offer courses in Chinese foreign relations.

Among the forty resident faculty members who will teach in the summer session are Dr. Stanley D. Porteus, Dr. Romanzo Adams and Dean William H. George. Dr. Porteus recently returned from the interior of Africa, where he tested the natives in an attempt to find the lowest common denominator of human intelligence as a basis for comparison in studies of racial psychology. The results of a similar expedition into central Australia are contained in his book, "The Psychology of a Primitive People." Dr. Adams is an outstanding authority on Polynesian social conditions and Dean George is the co-author of several books on government.

The School of Pacific and Oriental Affairs, a special department of the summer session for the dissemination of information concerning Pacific international affairs, will hold its fourth session. A special branch of the summer session will again be held at the Volcano House in Hawaii National Park, where Dr. T. A. Jaggar, famed volcanologist, will instruct students in volcanology, using Kilauea volcano as his laboratory.

Dr. Thayne M. Livesay will again direct the University of Hawaii summer session.

THE REGIONAL LIBRARY

THE regional library is favored by at least a score of states as the unit best adapted to furnishing economical and efficient state-wide library service, according to information from state planning committees as reported to the American Library Association.

A complete system of regional libraries for

Tennessee is now under consideration by the Tennessee legislature, to be provided by an annual appropriation of $650,000 (25 cents per capita). The budget submitted by the Educational Survey Commission includes this library item to be administered through a state library agency in the State Department of Education and a few large library systems providing local library service for every citizen, both rural and urban.

In West Virginia, where seventy-seven per cent. of the people are without library service, the legislature has before it a plan for state-wide library service through a state library agency and large-unit local libraries. Governor Kump, in his message to the legislature, urged favorable consideration for the measure, the cost of which would be met by a state appropriation supplemented by county funds.

In Illinois a biennial appropriation of one million dollars to provide library service to rural people through regional libraries is proposed by citizens. Permissive legislation, according to advice from the association, is being introduced in Georgia, Idaho, South Carolina and Washington. Michigan was the first state to enact a regional library law, in 1931.

Contracts between adjacent counties for library service are legally permitted now in a number of states. Two such county combinations are successfully operating in California, where Mariposa County contracts for service with the Merced County Library and Sierra County is served by contract with the Plumas County Library. But the newer trend, according to librarians, is toward the Michigan type of legislation, which provides for the division of the state into suitable regions with all the territory covered.

Even in New England, which is almost entirely covered with libraries, smaller library districts are being formed. They provide service from a larger central library to a number of surrounding towns. Bangor and Gardiner, Maine, for example, serve adjacent communities in this way.

It is suggested by the American Library Association that state planning committees can pattern their plans for regional libraries on one which is operating successfully across the border in the Fraser River basin, southeast of Vancouver in British Columbia. Here 40,000 rural people living in an area one hundred miles long by sixteen miles wide are supplied with library service from a central reservoir library operating through branches and deposit stations, with the aid of a large book truck.

THE THIRD CONFERENCE ON BUSINESS EDUCATION

SPECIAL emphasis will be given to the money problems of the individual at the Third Conference on Business Education, to be held at the University of Chicago on June 27 and 28, 1935, under the auspices of the School of Business. "Business Education and Money Management" will be the general topic discussed at the conference.

The individual's money problems will be dealt with on the first day of the conference. In the morning, Stuart P. Meech, associate professor of finance at the School of Business, will talk on "The Money Market and the Individual Investor," and H. A. Tonne, assistant professor of education, New York University, will discuss "How Various Income Groups Manage Their Money." At the afternoon session, Ralph R. Pickett, head of the department of commerce at Kansas State Teachers College, Emporia, will speak on "Money Management According to Ages, Occupations and Sex," and Garfield V. Cox, professor of finance in the School of Business, will discuss "An Evaluation of Financial Information and Services Available to the Individual."

The general topic for the second day will be "The Status and Means of Money Management Education." At the morning session, Dean W. H. Spencer of the School of Business will discuss "The Limitations of Law," and Samuel O. Rice, educational director of the Investment Bankers Association of America, will talk on "How Business Educates the Investor." At the afternoon session, Ann Brewington, assistant professor of secretarial training in the School of Business, will discuss "Money Management and the Schools," and the session will close with a jury panel discussion which is expected to lead to conclusions and recommendations on the main topic. Members of the jury panel will be E. G. Blackstone, head of the commercial teacher training division, State University of Iowa, chairman; L. H. Fritzemeier, teacher of

economics and commercial subjects, Oak Park High School, Oak Park, Illinois; James O. McKinsey, professor of business policies, University of Chicago; E. D. Pennell, School of Commerce, Western State Teachers College, Kalamazoo, Michigan; P. O. Selby, head of the division of business education, State Teachers College, Kirksville, Missouri, and Arthur R. Williams, head of the commerce education division, Illinois State Normal University, Normal, Illinois.

H. G. Shields, assistant dean of the School of Business, will preside at the first session; Clay D. Slinker, director of the department of business education, Des Moines Public Schools, Des Moines, Iowa, at the second; Emery Filbey, dean of faculties of the University of Chicago, at the third, and J. M. Trytten, instructor in commercial education, School of Education, University of Michigan, at the fourth. Floor discussion will follow each session.

THE DEPRESSION AND THE OHIO STATE UNIVERSITY

THE depression has not prevented the Ohio State University from making numerous changes intended to improve its services to students, according to the monthly journal of the institution. One such step was the creation of a personnel council, to coordinate the work of all campus people whose special duty it is to counsel with students. Another is the revision of curricula in several departments, such as English, some areas in engineering, veterinary medicine and geography, all the changes being made for the benefit of the students.

In extending its assistance to the high schools of the state, the university has been especially active. It sponsored the Educational Conference last spring, bringing nationally known speakers there to arouse public interest in behalf of the elementary and high schools.

Some 25,000 high-school students visited the campus this fall, inspecting classrooms and laboratories in the morning and attending the Indiana football game. A band and orchestra contest last spring brought approximately 2,000 high-school musicians to the campus; the school of journalism conference was attended by 400; 750 students from high schools in 17 counties came for the district scholarship contests last May; 85 high schools participated in the university-sponsored debate league; several hundred boys attended the vocational agriculture contests and the Future Farmers of America meetings; all counties were represented by delegates at the 4-H club congress. In addition, various high school athletic meets have been held on the campus.

Continuing its program of education for the unemployed, in which it was a pioneer in Ohio, the university has cooperated this fall in the Junior Radio College. Enrolments for the radio courses now total 856, in Ohio, seven other states and Canada. The curriculum includes courses in sociology, French, psychology, English, fundamentals of business and art appreciation.

COURSES IN THE ARTS AT TEACHERS COLLEGE, COLUMBIA UNIVERSITY

BEGINNING with the spring semester, which opened the first week in February, a new course was offered by Teachers College, Columbia University, on "The Arts in Education and Life," which deals with current problems in arts as they relate to the changing society in the United States.

Professors Peter W. Dykema, Belle Northrup, Harold Rugg, Milton Smith and cooperating artists are conducting the course, which is being held on Monday evenings in the Horace Mann Auditorium. The first meeting took place on Monday, February 11. This is an orientation course dealing with the place of the arts in modern education. As described by Dr. M. C. Del Manzo, provost of the college, it is designed for teachers of the arts at all levels, and for administrators, supervisors, parents and others interested in the arts in relation to education and to life. The course will be given by representatives of various fields in Teachers College, working in collaboration with certain schools in the metropolitan area. It will endeavor to show that the arts, properly organized and competently taught, have an important function in all living; and that significant trends in modern education—socialization, individual development, discovery of talent, stimulation of the creative spirit, building of attitudes as the background of character, connecting school with life, assisting in worthy use of leisure—are served as completely by the arts as by any other subject of instruction.

Some of the topics to be considered will be: The rôle of the creative and appreciative arts in our changing American life; creative literature; the theater, the dance and music; painting, drawing, sculpture and the crafts.

The constant endeavor will be to explore the psychology of the creative and appreciative processes and to interpret and evaluate educational methods. There will be lectures, readings and discussion; exhibits of student work at all levels, with interpretation and criticism; and visits to cooperating schools to study work in process and for round-table discussions with the teachers. A panel of professors and cooperating teachers will be present at each meeting.

NEW EDUCATIONAL PROGRAM AT THE UNIVERSITY OF REDLANDS

THE faculty of the College of Liberal Arts of the University of Redlands under the leadership of its committee on Educational Policy working with President C. H. Thurber completely reorganized the educational program of the college during the last academic year, and many phases of it are now in operation.

Proceeding on the assumption that rigorous pursuit of any well-organized field of study rather than the study of certain long prescribed ones provides the best true mental discipline, the entrance requirements are now concerned with the superior fitness of the individual for college work as evidenced by high achievement and sound character. Specifically, in addition to the completion of a secondary school course the college expects college ability in both written and spoken English, which will ordinarily be obtained from three to four years of secondary school English and two-year sequences in three of the following fields: social science, foreign language, fine arts, science and mathematics. During the first year in college the student, in addition to a year's study in English composition and literature for orientation and exploration purposes, will have comprehensive courses in the biological sciences, physical sciences, social sciences and religion, and during the sophomore year a course in fine arts and literature. Each of these courses cuts diametrically across the related subject-matter fields and serves to discover those interrelationships, unilaterals and universals which integrate and synthesize not only the related fields but all the fields of knowledge taught by the college.

A personnel officer plays an important part in this program. When the student enters college this officer makes a complete inventory of his traits, achievements and interests. He has all the available information concerning the student and keeps a continuing record of him. Together with the instructor he aids the student in finding the latter's enduring interests, in guiding him to choose the field of study for which he has a flair and in which he will be most likely to succeed. After counseling with the students continuously from their entrance into college, his is the responsibility of aiding them during the second semester of their sophomore year to choose their field of concentration and, in conjunction with the major professors, to project a curriculum covering the last two years with the student that will provide integration, continuity and synthesis. The personnel officer not only coordinates and makes a continuous study of admissions, but has general charge of placements.

During his sophomore year the student carries basic courses in at least two of the five divisions of study into which the subject-matter fields of the college have been grouped; so he will be enabled to choose his concentration in one or the other division without loss. On the senior college level, the organization is designed to be so flexible that students may carry on their concentration work by the independent study plan under the direction of a tutor whenever that is desirable. This may be either through the small group seminar or individualized instruction according to the situation. Routinized attendance upon classes on the senior college level is giving way to extended conferences with the tutor, at which time the student presents a critical report based on extensive reading, receives criticism and plans the work for the next week.

It was decided that all students coming up for graduation in 1934 and 1935 should take experimental comprehensive examinations; while in 1936 and thereafter all students must satisfy the faculty of their field of concentration of their appreciation, understanding and power through successfully negotiating his last hurdle for the bachelor of arts degree.—C. H. THURBER, *President.*

THE UNIVERSITY IN EXILE

THE appointment of a permanent board of trustees for the "University in Exile" was announced on February 18 by Dr. Alvin Johnson, director of the New School for Social Research. With I. A. Hirschmann as its chairman, the board will seek to make the university a permanent part of the nation's educational system. Serving with Mr. Hirschmann are Felix Frankfurter, Benjamin J. Buttenwieser, Hiram J. Halle, Thomas S. Lamont, William McChesney Martin, Jr., Howard M. Morse, Francis T. P. Plimpton and Eliot Deming Pratt. Donald Mulhern has been named executive secretary.

The decision to appoint a permanent board was reached by the university's advisory board after it had received a report by Dr. Johnson tracing the institution's growth from "scholastic experiment to established fact."

In accepting the provisional chairmanship of the group, Mr. Hirschmann stated in part that:

After the Nazi academic purge, higher scholarship in Germany, like all German educational provisions, became dogmatized and restricted. The free German culture, which it had become traditional that post-graduate students from America and all over the world should seek, as a complement to the facilities of their own lands, was eliminated, and a government-dictated machine was set up in its place. To-day that culture, that complementary opportunity, would exist nowhere in the world if it were not for the "University in Exile."

By its organization here in New York this institution has not only revived and perpetuated a culture developed through the centuries, which had established itself as essential to the world's educational scheme, but it has also widened the availability to this education. Many American students who could not have had the opportunity in Germany can now have the advantage of it. In addition, Americans who do not matriculate for degrees may attend classes as "auditors," and a number are doing so.

It is America's good fortune that in 1933 Dr. Alvin Johnson was alert to the privilege and the opportunity to select a faculty of the cream of the expelled German professors, and that Professor Emil Lederer and Professor E. R. A. Seligman and many others were able to assist him in the assembly of this group and the necessary economic arrangements. It is the only assemblage into a faculty unit of exiled scholars that has been made in the political and social sciences.

Of the approximately 100 professors of these sciences exiled by the Hitler dictatorship, all but thirty-four are scattered from London to Istanbul. Of the thirty-four in this country, sixteen have been assigned to various American universities by the Emergency Committee in Aid of Displaced German Scholars. Eighteen are concentrated at the "University in Exile."

THE NATIONAL CONFERENCE ON SUPERVISED CORRESPONDENCE STUDY

SUPERVISED correspondence study as a means of adapting the high-school curriculum more closely to the needs of the individual student without increased costs to the taxpayer will be discussed at the convention of the National Education Association to be held at Atlantic City, New Jersey, February 23 to 28. Dr. Frank W. Cyr, Teachers College, Columbia University, will act as chairman of the discussion scheduled for the Tuesday afternoon, February 26, session of the convention. Speakers will include Dr. Knute Broady, University of Nebraska; Dr. F. E. Long, New York University; Ralph L. Newing, International Correspondence Schools; R. B. Kennan, superintendent of schools, Georgetown, Delaware.

A plan of supervised correspondence study now in effect in some 150 high schools enables the individual student to select from courses offered by correspondence schools or university extension divisions any one or more of several hundred courses which will meet his requirements in preparing for a definite vocation. The work of the student is supervised by a member of the local high-school faculty, but lessons are corrected by the correspondence school or university extension division. Costs per pupil are lower than costs per pupil for a regular high-school course, thus making practicable even under present-day conditions, modernization and greater flexibility of the high-school curriculum along practical lines.

Members of the executive committee of the National Conference on Supervised Correspondence Study are: S. C. Mitchell, superintendent of schools, Benton Harbor, Mich.; Paul Cressman, assistant superintendent, State Department of Education, Lansing, Mich.; Dr. Frank W. Cyr, Teachers College, Columbia University, New York, N. Y.; Dr. W. H. Gaumnitz, United States Office of Education, Washington, D. C.;

Dr. J. O. Keller, Pennsylvania State College, State College, Pa.; James McKinney, the American Schools, Chicago, Ill.; J. A. Moyer, Massachusetts State Department of Education, Boston, Mass.; Ralph L. Newing, International Correspondence Schools, Scranton, Pa.; Dr. A. A. Reed, University of Nebraska, Lincoln, Nebraska.

EASTERN MUSIC SUPERVISORS CONFERENCE AT THE UNIVERSITY OF PITTSBURGH

MORE than 1,200 music teachers, supervisors, school administrators and other persons interested in music education from ten eastern states, the District of Columbia and the Provinces of Ontario and Quebec, Canada, will gather in Pittsburgh for the fourteenth annual Eastern Music Supervisors Conference, March 12 to 15. While the official opening of the conference is not until the morning of Wednesday, March 13, convention-goers will visit places of interest in and about Pittsburgh on Tuesday and hear a contest festival concert by the eastern intercollegiate glee clubs that evening.

President Laura Bryant, supervisor of music, Ithaca, New York, and Dr. Will Earhart, coordinating chairman of convention committees and director of music in the Pittsburgh public schools, have arranged a program of discussions, addresses and demonstrations, interspersed with concerts.

Among the persons who will give addresses are William McAndrew, editor of the *Educational Review* section of SCHOOL AND SOCIETY, New York; Miss Florence Hale, formerly president of the National Education Association; Howard Hanson, Eastman School of Music, Rochester, New York; Frank W. Wright, assistant commissioner of education, Massachusetts; Charles E. Griffith, Newark, New Jersey; Herman F. Smith, president, Music Educators National Conference, and Dr. Ben G. Graham, superintendent of the Pittsburgh public schools.

In addition to the contest festival concert by eastern intercollegiate glee clubs, a new addition to the conference this year, there is scheduled a festival concert by the Pittsburgh schools, on Wednesday evening, March 13, and a feature concert by an eastern conference chorus on the closing evening of the convention. Dr. John W. Neff, of the State Teachers College, Indiana, Pennsylvania, has organized the combined chorus. It will be directed by William Breach, of Buffalo, New York. While the conference will feature these concerts, high school orchestras and choruses will be heard prior to each of the general sessions on Wednesday, Thursday and Friday. Convention-goers themselves will have an opportunity to participate in lobby singing in Hotel William Penn, convention headquarters.

Teacher-training will be the topic discussed at the Thursday morning general session under the leadership of Francis Diers, of Fredonia, New York. "Music for every child, every child for music," is the theme of the Friday afternoon general session. This program will also feature a chorus of 200 children from the rural schools of Westmoreland County, Pennsylvania. The only section meetings will be held on Wednesday afternoon. These will be divided into five groups including general vocal music, creative music, general class instruction, instruction in orchestra instruments and percussion band and school orchestra.

The biennial banquet of the Eastern Music Supervisors Conference will be held on Thursday evening, March 14. F. Colwell Conklin, Larchmont, New York, will preside, and Ralph G. Winslow, Albany, New York, will act as toastmaster. Music and other special features will be included in the program.

Interesting exhibits under the auspices of the Music Education Exhibitors Association are expected to attract many. A music education achievement exhibit by the Pittsburgh public schools, planned by Dr. Will Earhart, director of music in Pittsburgh; Lee M. Lockhart, special supervisor of instrumental music, Pittsburgh, and the teachers and supervisors of music, is also being arranged.

Officers of the conference are: President, Laura Bryant, Ithaca, New York; first vice-president, Ralph G. Winslow, Albany, New York; second vice-president, F. Colwell Conklin, Larchmont, New York; secretary, Anna L. McInerney, Auburn, Rhode Island, and treasurer, Clarence Wells, East Orange, New Jersey. Dr. Ben G. Graham, superintendent of the Pittsburgh public schools, is convention chairman.

EDUCATIONAL NOTES AND NEWS

DR. JOHN W. STUDEBAKER, United States Commissioner of Education, spoke over the Columbia Broadcasting System on "Federal Guidance for Unemployed Young People" on February 20. Dr. Studebaker is scheduled to speak over the Columbia system on March 4.

DR. JAMES BRYANT CONANT, president of Harvard University, will be the guest speaker at the annual dinner of the Princeton University chapter of the Phi Beta Kappa Society on March 15. Other speakers will be Dr. Harold Willis Dodds, president of Princeton University, and Professor Christian Gauss, dean of the college.

DR. CLARK S. NORTHUP, professor of English at Cornell University and president of the United Chapters of the Phi Beta Kappa, presided at the presentation of the charter to the new chapter of the society opened at Connecticut College, New London, on February 13.

DR. LAWRENCE R. GUILD, head of the department of commercial engineering at the Carnegie Institute of Technology, Pittsburgh, has been appointed secretary general to the honor society of Phi Kappa Phi. Dr. Guild succeeds the late Dr. C. H. Gordon, who was officer of the society for twenty-three years.

DR. T. EARL SULLENGER, professor of sociology at the Municipal University of Omaha, has been reelected secretary-treasurer of the United Chapters of Alpha Kappa Delta, national honorary sociology fraternity. He is also editor of the official publication, *The News-Letter*. Other officers elected were: Dr. Read Bain, Miami University, president; Dr. John L. Gillin, University of Wisconsin, vice-president, and Dr. H. N. Shenton, Syracuse University, and Dr. Emory S. Bogardus, University of Southern California, members of the executive committee.

RICHARD KNOWLES, head master of the Great Neck Preparatory School, New York, has been appointed head master of the William Penn Charter School to succeed Richard M. Gummere, who has resigned.

MISS SUSAN D. BRANDEIS, daughter of Louis D. Brandeis, Supreme Court justice, and Christopher C. Mollenhauer have been appointed to the New York State Board of Regents.

DR. A. C. STOKES has been named president of the board of regents of the University of Nebraska.

DR. I. F. LEWIS, Miller professor of biology at the University of Virginia, has assumed his position as dean of the university. He is also director of the Mountain Lake Biological Station in southwestern Virginia.

PROFESSOR WOLFGANG KÖHLER, director of the Psychological Laboratory at the University of Berlin and lately of Harvard University, has been appointed visiting lecturer for both summer sessions at the University of Iowa, beginning June 10. He will offer courses in advanced general psychology, the psychology of learning and physiological psychology.

PROFESSOR ALFRED MANES, of the staff of Berlin University and Technical High School, now lecturing in the United States, has resigned. A wireless dispatch to the *New York Times* states that this has apparently been due to a difference with the government over the question of the Aryan clause.

PROFESSOR KURT LEWIN, formerly of the University of Berlin and lately of Stanford University, will be in residence during 1935–36 in the Child Welfare Research Station of the University of Iowa as visiting professor of child psychology.

AT Oberlin College, leaves of absence for the second semester of this year have been granted to Dr. Leigh Alexander, professor of classics; Dr. Clarence T. Craig, professor in the Graduate School of Theology; Dr. R. P. Jameson, professor of French; C. W. Savage, director of athletics; Frank H. Shaw, director of the conservatory, and Dr. Mary E. Sinclair, professor of mathematics.

DR. LOUIS A. WOOD, associate professor of economics at the University of Oregon, has been named a member of the board of directors of the National Institute of Immigrant Welfare.

DR. WILLIAM H. ROSS has been appointed an instructor of physics at the Massachusetts State

College. Dr. Ross has been serving as laboratory assistant in the physics department since 1933.

DR. W. E. JAEGER, associate professor of history and political science at the University of Maryland, has been granted a leave of absence. Dr. Reuben Steinmeyer will assume Dr. Jaeger's work until next June.

DR. MERRILL F. ROFF has been appointed instructor in the department of psychology at Indiana University. Dr. Roff has been engaged in research work in the department of psychology at the University of Chicago.

MISS MARION BAUER, associate professor of music at New York University, has been appointed to the staff of the summer session of music at Mills College.

DR. C. A. EDWARDS, principal of University College at Swansea, South Wales, arrived in this country on February 15 to give lectures at Yale University, the Carnegie Institute of Technology and the Franklin Institute in Philadelphia.

DR. CLARENCE MANION, professor of constitutional law at the University of Notre Dame, has been appointed director of federal emergency relief for Indiana.

JUDGE M. A. SOPER has been appointed chairman of a commission to make a study of Morgan College, a Negro institution in Baltimore, with a view to expansion and to investigate the desirability of having it become a state institution.

DR. ELAM J. ANDERSON, president of Linfield College, McMinnville, Oregon, will lead a group of students in a tour of the Orient during the coming summer.

DR. TYLER DENNETT, president of Williams College, was the principal speaker at the two-day education conference of the Secondary Education Board at Phillips Academy, Andover, Massachusetts, on February 15 and 16. The title of his address was "The Non-Academic Pupil in the Private Secondary School."

DR. STANLEY KING, president of Amherst College, spoke at the annual banquet of the Chicago alumni of the college on February 19.

DR. ALFRED E. STEARNS, head master emeritus of Andover Academy, spoke at the annual dinner of the Taft School at the Yale Club in New York on February 15.

DR. BRUCE CURRY, of the Union Theological Seminary, is to be the speaker for the fifth annual series of addresses on religious thought to be held the first week in March at the University of Denver.

DR. LYON GARDINER TYLER, president emeritus of the College of William and Mary since 1919, son of John Tyler, the tenth president of the United States, died on February 12 at the age of eighty-one years.

DR. FERDINAND BONNOTTE, for thirty-five years head of the modern language department of Western Maryland College, died on February 10 at the age of eighty years.

DR. CLARENCE GRANT HAMILTON, professor emeritus of music at Wellesley College, died on February 13 at the age of seventy years.

A CORRESPONDENT writes: "One of the leading men in educational work in Canada passed away on February 3 in the person of W. L. Grant, M.A., LL.D., principal of Upper Canada College, Toronto, the oldest and largest of the preparatory schools of Canada. His father was the late Principal George M. Grant, of Queen's University, Kingston, and he himself had been Beit lecturer on Colonial history in Oxford University before assuming office at Upper Canada College. He was an officer in the Great War and was prominent in public affairs in Canada."

DR. WILLIAM SLATER, head master of Adelphi Academy, Brooklyn, announced at the annual alumni day celebration of the school on February 13 the receipt of a gift of $25,000 to the school from an anonymous donor to reduce the mortgage indebtedness. The gift was conditional on the academy raising a similar sum, of which $10,000 already has been subscribed, according to Dr. Slater.

BARNARD COLLEGE, Columbia University, has received from its alumnae fund committee in 1934 the sum of $15,549. During the last two years the committee has raised over $30,000 for the use of the college.

VASSAR COLLEGE recently received a gift of 300 books from the Italian government. Pasquale Spinelli, Vice-Consul of New York, and

Prince Guido Colonna, of Rome, made the presentation. Professor Guido Ferrando, of the Italian department, made a speech of acceptance.

THE twenty-seventh annual conference of the Special Libraries Association will be held in Boston, Massachusetts, from June 11 to 14, with the Hotel Statler as convention headquarters. This will be the third time that the association has met in New England since its organization at Bretton Woods, New Hampshire, in 1909. The association met with the American Library Association at Swampscott in 1921 and returned to the same place for its annual conference in 1925 with the Northeastern Library Association. Miss Elizabeth Burrage, librarian of the School Administration Library of the Boston school committee, has been named convention chairman and Frederick W. Faxon has been appointed chairman of the travel committee.

OFFICIAL delegates from the American Library Association to the Second International Congress of Libraries and Bibliography, to be held in Madrid, Spain, from May 20 to 29, have been designated to include: the president and secretary, all living past presidents of the association; the members of the Committee on International Relations; the chairman of the Committee on Library Cooperation with Latin America; members of the Executive Board; the chairman of the Committee on Bibliography; presidents of affiliated national library organizations who attend; William Warner Bishop, representative of the American Library Association on the International Library Committee; Rebecca Rankin, Frederick P. Keppel, Herbert Putnam, John T. Vance, Joseph L. Wheeler, Louis R. Wilson and Gerhard R. Lomer, who (in addition to some of the officers named above) have been invited by the International Library Committee to act as chairmen or *rapporteurs* at various sessions, or who have some special interest in the subjects to be discussed. The board is unable to assume responsibility for delegates' expenses, but it has authorized the solicitation of funds for a few persons who have been invited to participate in the program. Dr. Bishop is president of the International Federation of Library Associations which is calling the congress.

THE first public showing of sound motion pictures of the life and growth of the human infant produced by the Yale Clinic of Child Development was given in New Haven on February 16. The films were assembled from scientific records collected by the clinic over a period of years. They are intended for general educational and study purposes. The subjects include a description of the methods of studying infant behavior; early and later stages in the growth of infant behavior; posture and locomotion; from creeping to walking; a baby's day at twelve weeks; a thirty-six weeks' behavior day; a behavior day at forty-eight weeks; behavior patterns at one year; learning and growth, and early social behavior. The narrative spoken by Dr. Arnold Gesell, director of the clinic, is integrated throughout with the picture presentation. The films are unique as a means of bringing the results of scientific study over many years in the laboratory to persons who are actual practitioners in fields of child health and child training.

THE New York Senate Education Committee has favorably reported the Nunan bill requiring students entering institutions of higher learning financed wholly or in part by the state to pledge allegiance to the Constitution. The bill requires approximately the same oath from the student as is now required of teachers in New York State by the Ives law.

THE speech department of the University of Denver, under the direction of Dr. Elwood Murray, associate professor of speech and dramatic art, was host to the fourth annual Rocky Mountain Speech Conference on February 7, 8 and 9. The program was planned for teachers, college and high-school students, and directors of speech activities and pageants in churches. It emphasized both the scientific and the artistic aspects of public speaking and acting, and was built up on four strands: one especially for teachers and students of public speaking and debate; a second for teachers and students of the dramatic arts and the interpretation of the printed page; a third for school superintendents and principals, supervisors and speech department heads; and a fourth planned especially to show the entertainment to be obtained through able dramatic presentation. Opportunity was

given delegates to learn the newer developments, obtained through research, in the pedagogy of speech training.

Two changes in the course of study of freshman year at Princeton University, designed to increase the interest of the undergraduate in his work, have been announced. The revision gives further recognition to differences in the aptitudes, needs and aims of students. The first of the regulations permits the substitution of other subjects than the classics or mathematics in the freshman years. The second change throws open sophomore courses to proficient first-year students.

DISCUSSION

THE EFFECT OF MOTIVATION UPON THE RELATIONSHIP BETWEEN ACHIEVEMENT AND INTELLIGENCE

IN an article[1] published in 1930, the writer stated that it might be of interest to determine empirically the effect of motivation upon the intelligence-achievement ratio. Quite frequently the relatively low correlation between intelligence test scores and school marks is explained, at least partially, in terms of the variations among students with respect to this factor. Franzen[2] and Madsen,[3] in connection with their attempts to adapt teaching methods to individual pupils, found that such adaptation led to a higher capacity-achievement relationship which they seemed inclined to think was due to superior motivation. In other words, a bright student poorly motivated may achieve significantly less than one not so well endowed, yet more willing to work.

The reasonableness of this proposition is patent, but I have not come across any study in which motivation was consciously varied in an attempt to determine its effect upon the capacity-achievement ratio. Odell[4] concerned himself only incidentally with this general problem in his review of the literature on achievement relative to capacity. Jones[5] studied among other things the variation in grade-test correlations from college to college and maintained that this variation resulted from differences in student motivation at the different schools. He did not, however, try to vary this factor and observe the results, but merely made a very plausible inference.

The following brief study represents an attempt to determine the effect of motivation on the capacity-achievement ratio by comparing the correlations of Army Alpha scores with (a) test results obtained from "surprise" quizzes, and (b) test results obtained from a final examination announced long in advance. The most obvious assumption involved in such an attack upon the problem is that achievement is motivated much more adequately in a final examination than it is in a "surprise" quiz. This appears to be true for two reasons: First, the surprise quiz as used here was given without warning over a recent assignment, so that the incentive to study, however strong it may be, which is provided by the admonition that "you'll be tested on this material" was not operative; and second, in connection with the final examination the students knew that the score would count for one fifth of the semester's grade. Any one familiar with the atmosphere during a final examination period will readily grant that motivation, at least as compared to that of the ordinary school day, is at a high level.

The surprise quiz was over the topic of "Ideation" and included some 60 multiple choice items (four alternatives) that had been carefully standardized for a number of semesters. The final examination consisted of 96 multiple choice and 18 matching exercises covering the text "Educational Psychology" by E. H. Cameron. Both were given to 104 students who had previously taken Army Alpha, so that records on all three tests were available for treatment.

[1] Stephen M. Corey, SCHOOL AND SOCIETY, 32: 849 *f.*, 1930.

[2] R. H. Franzen, Teachers College Contribution to Education, No. 125, Columbia University, N. Y., 1922.

[3] I. N. Madsen, *American School Board Journal*, 68: 63–65, 1924.

[4] C. W. Odell, *Bulletin* 45, Bureau of Educational Research, University of Illinois, 1929.

[5] E. S. Jones, SCHOOL AND SOCIETY, 36: 478–480, 1932.

The subject-matter tests used were of known reliability. The coefficient for the final examination was + .82 P.E. .023, and for the new type test dealing with "Ideation" + .84 P.E. .03. Army Alpha is variously reported as having a reliability of from + .80 to + .90. In correcting for attenuation, use was made of the value + .85, as that result has been obtained quite frequently in the writer's classes. The correlations obtained for the raw data were (a) between Army Alpha and the surprise quiz, + .055 P.E. .066; and (b) between Army Alpha and the final examination, + .52 P.E. .05. These values when corrected for attenuation became + .064 and + .62 respectively.

DISCUSSION

It is apparent that the theoretical implication of the difference between these correlations hinges on the admission that motivation was the most significant variable in the testing situations. While outside work, poor health, worry, extra-curricular activities and the like do affect the achievement-capacity relationship, there is no reason to believe that these factors would be operative at the time of the surprise quiz and not during the final examintaion or *vice versa*.

If this assumption is true, the student's score on the surprise quiz seemed to depend chiefly upon whether or not he had studied the assignment—whether or not he had been motivated to work. Intelligence, at least as measured by Army Alpha scores, was an item of negligible influence. The customary correlation between achievement and capacity disappeared because variations in motivation had an effect similar to that of any other variable error.[6] This conclusion is borne out by the significantly higher correlation between Army Alpha scores and objective final examination grades. The magnitude of this correlation (+ .62 P.E. .05) as compared with that involving the surprise quiz (+ .064) indicates that variability in motivation between students was in a large degree eliminated.

Although the author is familiar with many of the criticisms directed toward Franzen's[7] suggestion that the accomplishment ratio be used as a method for evaluating, in part at least, instructional efficiency,[8] the conclusion seems inevitable that some such measure as his should have great practical value. As a matter of fact Flemming[9] makes considerable use of a similar index in a study of emotional stability published in 1928. Willingness to learn is undeniably a most significant factor in student achievement. Other things being equal, if all students could be stimulated to work at their highest level, achievement would be very indicative of intelligence. Those who regard the task of the teacher as being chiefly to *stimulate* the student to learning activity must feel that instruction has failed in the degree that the most capable students have not achieved most.

To determine in general whether any one instructor has been particularly successful in motivating his students should be a relatively easy matter. The marks he gives to his students could be correlated with their capacity as measured by intelligence tests. If the course offered has real reason for existence, *i.e.*, if the information involved must be *learned* and is not already a part of the student's mental equipment, and if the measures of achievement and intelligence are reliable,[10] a close relation between achievement and capacity indicates good teaching. With the administration of numerous achievement tests to determine the progress of improvement, the possibility that none of the students had worked could be readily eliminated. It would at least be interesting to check empirically and see whether under actual teaching conditions the successful instructors do get achievement commensurate with the ability of their students.

STEPHEN M. COREY
UNIVERSITY OF NEBRASKA

[6] E. L. Thorndike, "Theory of Social Measurement," 2d edition, p. 178, Teachers College, Columbia University, 1916.

[7] H. R. Franzen, *op. cit.*

[8] See Odell, p. 35, *op. cit.*

[9] Edwin G. Flemming, *Archives of Psychology*, No. 26, p. 23 *f.*, 1928.

[10] The use of a formula correcting for attenuation or unreliability makes possible rather fruitful studies, even though the basic data are not as reliable as they should be.

WHAT USE IS IT TO HIM?

IN education we have two fundamental viewpoints of subject-matter—the functional and disciplinarian concepts of content. It is the opinion of specialists that the latter concept still dominates the elementary and secondary

education of this country. If this is true of the two major fields of education, which point of view predominates the adult education now sweeping the country with such great force? Are the thousands of teachers now engaged in the education of adults presenting subject-matter which largely tends to train and discipline the mind? Do these teachers expect to see transfer of training take place in the minds of their students? Are they attempting to prepare these adults for further life in the sense of deferred values? These are vital questions which raise vital problems in the present field of adult education. So important are they that any failure to answer them in the very near future will undoubtedly heap deprecating and disastrous results upon this relatively new type of education. Probably research only can give us a scientific and objective answer to these questions, but too often research tarries long and problems must be solved interim by subjective reasoning. Let us tackle our problem in this way until objective evidence can be presented.

Because of the activity of the Federal Government in adult education the majority of the persons now engaged in this work are teachers recruited from the ranks of the unemployed. Most of these have had much experience in teaching—in years when the disciplinarian conception of subject-matter reigned unchallenged over all education. For years they have viewed the content taught as merely something to train and discipline the pupil's mind. Do they still carry these views? Or has their teaching kept pace with a changing philosophy of education and a changing world. I wonder! "It's pretty hard to teach an old hoss new tricks," some one once said. If this "philosopher" had also said, "It's pretty hard to teach an old school teacher new tricks" he would have been just as correct.

I had an experience several weeks ago which prompts me to believe that too many of those working in adult education still have the old disciplinarian conception of subject-matter. I attended a series of conferences for EEP teachers. There, as in all conferences, problems and complaints were brought out by the discussions. One of the most troublesome problems seemed to be: "How can I hold my adult students? There is no compulsory attendance in adult education. Then how am I going to keep the students coming to my classes?" This question was brought up by one of the teachers, and 75 per cent. of the others echoed, rather dismally, "Yes, how?" The discussion leader tried to be as helpful as possible and maintained that the way to hold students in adult education is to keep up their interest. A discussion on this point followed and it was pointed out that interest could be maintained in adult classes in the following ways: (1) Through the personality of the teacher. (2) Through the enthusiasm of the teacher for the subject. (3) Through an interesting teaching method.

This is all very true and good, but teachers who had all these points in their favor had lost students and continued to lose them, and were just as much in the dark now as they had been before. "Interest" had only scratched the surface of the solution to this problem. The base was utterly ignored. The trouble was that most of these teachers were teaching their adult students the same subject-matter they had taught to elementary and high school children many years before as permanently employed teachers. They did nothing in reorganizing the subject-matter to fit the needs of their adult students. Indeed, such a thought never entered their minds. Their teaching consisted almost entirely in teaching mind-training elementary and secondary content from old second-hand text-books —chronologically as they were written. The psychological organization of subject-matter seemed to be farthest from their minds. These teachers were teaching static subject-matter in a dynamic type of education encouraged by a dynamic society. Is it any wonder that they failed?

The students in adult education are not interested in having their minds trained; they don't care a rap about something which they can use later on in life; theirs is not a life of deferred values; it is a life made up entirely of present values. The adult student is interested in subject-matter which has the greatest possible use to him in his present living as an adult individual. He is a human being struggling for existence in a world of social and economic change—social and economic change which affects him very materially—so materially that he has found adjustment necessary—adjustment

which has been difficult for him to make. Because of this he has turned to adult education, and adult education must turn to him. Are we going to fail him by teaching that Columbus came to America in 1492 with a fleet of three ships, the Santa Maria, the Pinta and the Nina? Or are we going to help him by the teaching of facts, problems, concepts, skills, attitudes, tastes and ideals that he needs, that he can use and will use. If we do this we will help him find himself. If we do not do this, we have failed him—education has failed him when he needed it most.

Adult education is useless to this confused and puzzled adult unless the subject-matter taught has functional value—unless it is utilitarian and inclusive of appreciation and enjoyment. That is what he needs, that is what he wants, and that is what will hold his interest. The personality of the teacher, the enthusiasm of the teacher for the subject and the teaching method will soon weary the adult student and cause him to lose interest if in addition he is not given something to use in his present living—something that will make him a more contented, happy and secure citizen.

LADD C. PRUCHA

CHICAGO, ILL.

SPECIAL CORRESPONDENCE

HOW RURAL TEACHERS ARE EDUCATED IN MEXICO

IT was a pleasure to the writer to read in SCHOOL AND SOCIETY[1] the article entitled "Mexico's Program of Rural Education," written by Mr. W. Cameron Townsend, and it seems important for American teachers to know more about the education of rural teachers in Mexico.

There are several normal rural schools throughout the Republic of Mexico, located principally in the big centers of rural population, and the secretary of education in Mexico City is planning to build more for the public service.

Boys eligible to attend the normal rural schools are selected from primary rural schools, having finished their fourth grade, which is comparable to the fifth or sixth grade of the public schools in the United States. Before they enter the normal schools, they must pass a new examination, not only about their knowledge but also concerning their health and their willingness to become rural teachers. The Federal Government, in cooperation with the states, pays all the expenses for these boys.

General plans are formulated in Mexico City by a technical board of special teachers in the office of the secretary of education, which are followed in general, as not all the regions of the country are the same. In these plans are combined the methods used in the United States and in Europe for the *"new schools"* that Dewey, Decroly, Montessori and some others have considered the best, making at the same time of the normal rural schools the true "schools of action" so desired by the rural population and, further, the general plans of Mexico City's technical board may be applied to the special conditions of the country. And so, in the normal rural schools of Mexico, boys and teachers combine intellectual and hand work.

In the writer's school at Cerro Hueco, in the State of Chiapas, Mexico—the southernmost state of the republic—all arise at five o'clock in the morning. Sometimes we engage in physical exercises, at other times we play ball; and we do all the work needed for the school.

Boys and teachers may be found in the early hours of the morning building a new bedroom for new pupils, caring for the road, feeding the chickens and cattle, cleaning the buildings, preparing their food and sometimes studying their daily lessons. During the period devoted to organized exercise, we always sing the sweet and beautiful songs of the land. These activities last for two hours. The time from 7:00 to 7:30 is devoted to the daily bath. Mexican boys like to swim, and most of them know how to do it well. From 7:30 to 8:00 is a study period. At eight o'clock breakfast—consisting of hot coffee, milk, beans, "tortillas" (flapjacks), bread and sometimes fruit—is served.

Boys and teachers rest or study till nine and then continue their work. Some of the boys go to the classrooms for information from the teachers, as all the lessons must be combined with the day's activities; others, previously in-

[1] SCHOOL AND SOCIETY, 39: 1018, June 30, 1934.

structed, engage in various occupations—masonry, blacksmithing, shoemaking, saddlemaking, etc. Boys may stay only forty-five minutes in the classrooms and two hours in the shops at one time. This prevents fatigue and keeps them interested in their work.

One o'clock in the afternoon is luncheon time. Menus are of great variety, consisting of dishes prepared at the same school—"the best." From 1:00 to 3:00 P. M. is a time for rest, study, play or conversation.

At 3:00 all return to their work and study. At this time the agricultural program of the day begins. A specialist in agronomics trains the boys in practical agriculture, showing them new methods. Some of the more advanced boys go to the nearby towns to practise teaching; others organize temperance lectures or simple social meetings, under the direction of their teachers. The building work is continued also, all these activities being so organized that all may in turn participate in them.

At 7:00 P. M., we have our supper—hot coffee, cheese, bread, "tortillas," milk and fruit being served. From 7:30 to 8:30 the library is opened so that every one may get the information needed for the next day's work. From 9:00 to 10:00 P. M. every night is the social hour—a time for chatting, playing games, singing, reciting poems or seeing the movies. At 10:00 the bell rings for rest, and in ten minutes everybody is in bed.

Rural teachers are thus educated in Mexico, through the combined efforts of the Government and the people to train better citizens and the labor of our department of agricultural teaching and normal schools, under the direction of Ing. Manuel A. Meza. This is what the secretary of education has done to prepare teachers for the rural classes of Mexico.

Normal rural teaching studies are carried on in four grades. There is a special grade, called "complementary grade," for the newly arrived boys. The last two grades are dedicated to the teaching of pedagogy and practising new methods of education.

Every normal rural school in Mexico has connected with it a primary school, presided over by a special teacher, where the boys practise and study the science of education. They know that there is a specialist for every subject on their program, who may be consulted at any time.

The schools are self-governed. The boys choose their president, who is elected for six months, and they also name special boards for every activity. They follow the cooperative system in managing their interests, and the project method is employed.

Cerro Hueco occupies a beautiful site near Tuxtla Gutiérrez, the capital of the state of Chiapas. It was the summer residence of Governor Rafael Pimentel during the régime of Porfirio Diaz, and was built near the top of a mountain. The air is always clear, and big trees, many brooks filled with clear water, all the tropical flowers, birds and perfume, give us great happiness.

RAMON A. RIVERA
CERRO HUECO, CHIAPAS, MEXICO

QUOTATIONS

PROFESSORS AT LARGE AT HARVARD UNIVERSITY

As is well known, the Faculty of the University is divided for purposes of administration into "Faculties," each presiding over a single "school," except the Faculty of Arts and Sciences, which presides over Harvard College as well as the Graduate School of Arts and Sciences. In some cases these faculties are in turn divided into departments and divisions. The division is the larger unit, but its function is almost wholly limited to the administration of the A.M. and Ph.D. degrees. In the Faculty of Arts and Sciences it is (to an increasing extent) the department which of all administrative units has the greatest responsibility and cohesion. Every member of this faculty feels that he "belongs" first of all to his department, that he owes it his first loyalty; while the department, which carries his salary on its budget, and ordinarily takes the initiative both in his appointment and in his promotion, feels that it has the first claim upon his time. This departmental organization has on the whole worked well at Harvard. Departmental pride and emulation have stimulated zeal. The departments have provided the indi-

vidual instructor with a sense of security and a center of intimate personal cooperation.

Meanwhile human knowledge has developed in ways of its own and with little regard for the administrative or curricular organization of Harvard University. A professor thus finds that the subject which he investigates sometimes extends over into the provinces of schools or departments other than that to which he "belongs." As an investigator it is clearly his business to follow the subject whithersoever it leads him, rather than to confine himself within the boundaries of his academic classification. This difficulty of adjustment is to be regarded not as an evil, but as a symptom of healthy growth and of liberal-mindedness. It is one of the chief merits of a great university that the parts of human knowledge should be aware of one another, that they should fructify one another, and that the whole should be an organism rather than an aggregation of insulated cubicles.

The difficulty has not proved insuperable under the existing organization of the university. Some professors feel a divided allegiance among two or more departments, or separate their non-departmental research from their departmental teaching and administration. In proposing that there shall be professors "without portfolio" or "with roving commissions," President Conant wishes explicitly to recognize that the development of knowledge itself must take precedence over the artificial distinctions of university organization. If it so happens, for example, that the subject of crime requires investigation; and if it so happens that this subject has its legal, its sociological, and its psychological aspects; and if it so happens that there is an available scholar who is competent to investigate the subject; then the investigation should not be hindered by insisting that the investigator shall "belong," in any exclusive sense either to the Law School, or to the Division of Sociology, or to the Department of Psychology. If the subject requires it, and if the scholar has the competence, let him be lawyer, psychologist, and sociologist all in one; while as to belonging, let him "belong" to Harvard University.—*Harvard Alumni Bulletin.*

REPORTS

NATIONAL BROADCASTING[1]

IT may not be wise, at this time and under present conditions, to suggest changes in our national broadcasting arrangements. Probably it will be about as effective as pouring a gallon of oil on hurricane-troubled waters. Nevertheless, a large majority of radio listeners are hoping that some day and somehow an arrangement will be worked out so that we shall not *have* to listen to drivel nine out of every ten hours we should like to have our radios turned on.

Knowing this, and hoping that perhaps the new Federal Communications Commission, coupled with the public demand, may be able to outsmart the "smart," public-be-duped (as *they* seem to say) commercial radio interests, I have tried to vision a federal and state controlled broadcasting plan that would satisfy most of the listeners most of the time, and still give the advertisers a chance at fooling those who want to be fooled.

It can not be denied that some people really enjoy listening to jazz and crooning. I would not call them morons—at least not all of them—for perhaps many of them just don't know any better. These same ones may feel also that radio advertising really gives them an opportunity to keep abreast of the great advance toward bigger and better things which has taken place in cosmetics, health-toner-uppers, weight-reducers and other marvelous concoctions. I feel that these gullibles must be fed, and would therefore retain, in what I may be permitted to term an ideal national broadcasting service, programs to please them.

Paralleling the hodge-podge produced at one source for those who simply must have it, I would have another source devoted to better things: good music—from light to heavy—talks and educational features of national interest, elevating and entertaining drama, international broadcasts.

Still a third unit would consist of state-owned

[1] A plan prepared by R. D. Michael, assistant agricultural editor, Virginia Agricultural and Mechanical College, Blacksburg, Virginia.

and operated stations devoted to public school and adult education, state problems and events of local interest, and music from good state sources.

I believe these last two units could be so operated throughout the country that the educational features of the states would not conflict with the best features of the non-advertising or elevated system. The national chain of stations carrying the programs of best-available features of information, music and entertainment would at times, through choice and necessity, have periods of light music. It could even have stretches of void. I feel, however, it would be better to have the light music, for all of us have spells when we do not care to listen to anything but music.

With the elevated system and the state stations striving for the best, and unhampered by advertising's idiotic wishes, the super-salesmen of radio would soon be jarred into sensibility. I believe they would find out that cheap jazz, crooning, low drama and ballyhoo are not as popular as they think. They would have to raise the level of their own programs in order to stand in with the listening public; and the United States would come out of its radio doldrums.

Such a plan, then, would call for three units: two national chains and at least 48 state stations (some of the larger states may need more than one station for good coverage). These state stations would have power adequate to cover their respective territories and would be centrally located within the state from a broadcasting point of view. Network A would carry advertising. Network B would aim at the highest standards in all the better things adaptable to radio. The state stations, operated full or part time, would meet the needs of state government and education.

There are, of course, some difficulties in the way of such a plan. There should be no question about material, for there is plenty of the best to fill every period on Network B; and certainly, even after eliminating the worst of dance orchestra and crooners, there would remain an ample supply to jingle the wires on Network A.

The problems of coverage and financing seem most critical.

It would be practical to use at first present stations in present locations, until the scheme of operating the two networks is going smoothly. Later, one by one, many of the stations would have to be moved, rebuilt, and their power adjusted so that complete coverage of the nation is obtained with a minimum number of stations. Every radio listener should be able to tune in with ease a station on Network A, one on Network B and his own state station at any time that atmospheric conditions are at all good. This would mean the location of a station of each network at advantageous points throughout the nation, regardless of state boundaries or municipal centers. Each state station, as already mentioned, would be so located and of such power as to give ample coverage of the state for which it is operated.

This three-unit plan would eliminate many small stations, but our smaller stations contribute so little of value to even the average listener that one wonders how they manage to keep on the air. However, existing stations not incorporated into the three units might be allowed to remain on the air, provided that their wave-lengths in no way interfere with any of the member stations, chain or state, and that there is enough power allocation to go around.

Judging from maps prepared by present broadcasting interests, a station of 25,000 watts power should cover an area of about 100,000 square miles. On this basis Georgia, for instance, would have three such stations, all located at or near Macon, if engineering tests showed this to be a vantage point. This would be a fair allocation of power, would meet the needs of listeners in that state, and would no doubt contribute to the elimination of the radio jumble that has been allowed to grow up in this country.

As for financing, Network A would be self-sustaining, the state stations would be state-operated, and Network B would come under federal operation. Operating costs could be obtained from a tax on receiving sets, collected from the manufacturers by the Federal Government. Such of this income as would be needed by state stations would be equitably divided among them and the rest used for Network B and other broadcasting expenses of federal interests.

The consumer will say that he will have to pay the tax eventually. Perhaps; but I believe he could pay a *fair* price for a receiving set plus a good-sized tax and still pay less than he does now. If manufacturers insist on asking $200 for receiving sets that are a "gyp" at half the price, then the government should either do some investigating in this direction or go into the manufacture of receiving sets at a cost plus fair profit plus tax basis.

That calls for a "squawk" about government in business and rugged individualism. Like a lot of others who never have had any, I believe that when rugged individualism makes itself obnoxious to the welfare of thousands for the sake of lining the pockets of a few, it needs curbing. Not all manufacturers, thank heavens, are vulnerable to such criticism; but there are others who will cry because it hurts.

Though I am not an ardent politician, I do feel that for once money isn't the only thing that talks. A little conscientious regard for the rights of humanity in general is getting a word in now and then. I do not doubt that there are some millions of people in this country who have high hopes that some day soon there is going to be a "new deal" in the air.

DAILY RADIO PROGRAM UNDER THREE-UNIT PLAN

Time	*Network A*	*Network B*	*State Stations*
6–7 A.M.	15-minute advertising periods (jazz, crooning, serials)	Silent	Silent
7–10 A.M.	15-minute advertising periods	Light classics, recordings of merit, and the like	Informational features for home and school
10–11:30 A.M.	Good sustaining programs	Talks of national interest for schools and adults	Music, if desired; or silent
11:30 A.M.–2:30 P.M.	15-minute advertising periods	Music and farm and home periods	Music and farm and home periods
2:30–5 P.M.	Sports, music, advertising	Good drama, international programs, and the like	Silent
5–7 P.M.	15-minute advertising periods	Music, news, political addresses of merit, educational talks by outstanding speakers, and the like	Talks and educational features while music is on Network B; music from good local sources
7–12 P.M.	15-minute advertising periods	Opera, symphonies, drama	Silent

Since this article was written, Mr. Jack Dalton, assistant librarian at the University of Virginia, whose interest in educational broadcasting has often been associated with mine, has made the helpful suggestion that Network B be so managed that the state station features be taken care of by the individual facilities of the network. This would eliminate the third unit and reduce expenses greatly. Such an arrangement could well be considered, especially at the start. Later, when more outlets for material are found necessary, the third unit could be established.

EDUCATIONAL RESEARCH AND STATISTICS

ENDOWMENTS IN AMERICAN COLLEGES AND UNIVERSITIES

UNDER present disturbed economic conditions, American college and university executives and governing boards are giving closer attention than ever before to questions of finance and especially to sources of income. Under the American theory of at least partial equalization of opportunity for higher education to all the youth of the land, the student is expected to pay only a portion of the cost of his education in tuition and other fees. A recent volume

on university administration shows that this amounts to only 12 per cent. in the publicly controlled institutions of the country and 41 per cent. in those under private control.[1] The balance is made up largely from taxation in the case of the publicly controlled institutions or from gifts and interest on permanent invested funds (endowments) in the case of the institutions under private control.

The fundamental importance of endowment as an essential feature of the support of the American college and university which can not supplement student fees by taxation is recognized by all students of higher education. As will be shown later, less than 5 per cent. of recognized, non-tax-supported American colleges and universities are attempting to perform their functions in the field of higher education without some endowment, even though it may be quite inadequate for the purpose. Two questions suggest themselves as of fundamental importance in studying college endowment: How much should it be? How much is it?

It is desirable to answer the last question before considering the first. It is advisable to establish norms of practise before discussing desirable standards. It is easy to tabulate the total endowments reported by American colleges and universities from the $117,000,000 reported for Harvard University down to those which have none. Such a summary, however, has little significance unless taken in connection with other relevant factors. Haverford College and Syracuse University, for example, are each credited with an endowment of approximately $4,000,000. The former has 300 students and 40 members of the faculty; the latter over 5,500 students and more than 650 faculty members—about seventeen times as many students to be educated and faculty members to receive salaries from the income from the same amounts of endowment. Obviously any real analysis of the adequacy of endowment must take into consideration the number of faculty and number of students in the institution as well as the amount of the endowment. In the present study an effort is made to present a summary of significant endowment data for almost four hundred privately controlled American institutions of higher learning from three standpoints: (1) endowment per student enrolled; (2) endowment per total student capacity; and (3) endowment per faculty member.

[1] E. E. Lindsay and E. O. Holland, "College and University Administration," pp. 40, 55. Macmillan. 1930.

SOURCES OF INFORMATION

Any one who has attempted any work in the field of statistics of higher education, particularly those involving computations of unit costs or resources, recognizes the difficulties and limitations of the problem. Records are not kept in the same form in different institutions, and resulting reports are sure not to be on a strictly comparable basis. Fundamental definitions differ. What is endowment? What is a student? What is a member of the faculty? There is no agreement on the definitions of these terms nor on how they should be used for computation of unit figures. In the existing status of educational statistics, only approximations are possible, yet these have considerable value if their limitations are recognized.

In the present study the data collected (presumably on a somewhat uniform and comparable basis) and presented in Hurt's "College Blue Book" (third edition, 1933) have been used as a basis. For each of almost six hundred recognized American colleges and universities this volume reports among other features the type of control, amount of endowment, student enrolment, student capacity and number of members of the faculty. These fundamental data were used for computing the unit endowments summarized below. In cases where the enrolment was reported as "including summer session" the summer enrolment as reported by the U. S. Office of Education[2] was subtracted so as to arrive at a closer approximation of the number of full-time students. The seventy-five tax-supported institutions (state or municipal universities) were omitted from consideration, although in a few cases they possess substantial endowments.[3] Two groups of institutions on

[2] In "Biennial Survey of Education," U. S. Office of Education, *Bulletin*, 1931, No. 20.

[3] See for example the $30,000,000 endowment of the University of Texas, amounting to an endowment of $4,380 per student or of $70,400 per faculty member, much greater than that found in a majority of the privately controlled institutions; or the $10,000,000 endowment of the University of Virginia ($3,940) per student, $49,000 per fac-

denominational foundations also were excluded, the 113 Catholic institutions and six under the Seventh Day Adventists. In most cases the instructors in these institutions contribute their services to the work, usually on a maintenance basis. Such cases are usually reported in the "College Blue Book" as "endowment of teachers" with or without a numerical equivalent. In any case it is clear that they are not properly comparable with the remaining institutions where faculty salaries constitute the greater portion of the current operating expense.[4]

TABLE I

DISTRIBUTION OF AMERICAN PRIVATELY CONTROLLED COLLEGES AND UNIVERSITIES ACCORDING TO ENDOWMENT PER STUDENT ENROLLED

Endowment range	Number of institutions
$15,000–$19,999	6
10,000– 14,999	7
9,000– 9,999	2
8,000– 8,999	4
7,000– 7,999	4
6,000– 6,999	6
5,000– 5,999	8
4,000– 4,999	16
3,000– 3,999	37
2,500– 2,999	26
2,000– 2,499	36
1,500– 1,999	41
1,000– 1,499	70
500– 999	55
1– 499	51
0	18

Average (mean) $2,357

ulty member); or the $9,000,000 endowment of the Municipal University of Cincinnati ($1,630 per student, and $15,200 per faculty member). Such examples, however, are exceptional. Thirty-three of the institutions report no endowment, and in 28 others it is less than $500 per student. In only four cases does it exceed $1,000 per student.

[4] A few Catholic institutions report large endowments, but these are exceptional. The largest reported, aside from "endowment of teachers," are Catholic University of America, $3,000,000 ($1,520 per student, $21,700 per instructor); Creighton University (Nebraska), $2,300,000 ($940 per student, $12,500 per instructor); Mercyhurst College (Pennsylvania), $1,680,000 ($12,900 per student, $88,400 per instructor). There were 68 Catholic institutions reporting no endowment. Only one of the Seventh Day Adventist institutions reported any endowment, $250,000 or $600 per student.

When these three groups of non-comparable institutions were excluded, there remained 386 four-year, privately controlled, American colleges and universities, on a denominational or non-sectarian basis. The information summarized in the remainder of this article refers to these institutions only.

ENDOWMENT PER STUDENT ENROLMENT

The distribution of institutions on the basis of endowment per student enrolled is summarized in Table I.

It is of some interest to note the thirteen institutions having the largest endowments, those of more than $10,000 per student. They are the following:

Harvard University	$19,400
Yale University	18,100
William Smith College (New York)	16,200
Bennington College	15,600
Duke University	15,100
Amherst College	14,900
Vanderbilt University	13,900
Haverford College	13,300
Bryn Mawr College	12,200
Swarthmore College	11,600
University of Rochester	10,500
Colgate University	10,500
Oberlin College	10,300

This small group of thirteen institutions is representative of various types of education; of institutions for men, for women and of coeducational type; of the large university with thousands of students, and of the small college of less than one hundred students. It is not so representative geographically, for all are located east of the Mississippi River and most of them along the Atlantic seaboard.

A presentation of the distribution of endowment per student more useful for many purposes than that given in Table I can be secured by arranging the institutions according to size of endowment per student from the largest to the smallest and reporting those at 5 per cent. intervals, thus forming a "percentile" table. Table II is such a table.

From this table the college executive whose institution, according to the "College Blue Book," has an endowment of $2,500 can see at a glance that it is greater than that of 70 per cent. of the

TABLE II

PERCENTILE DISTRIBUTION OF PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO ENDOWMENT PER STUDENT ENROLLED

Percentile	Endowment
100	$19,382
95	8,071
90	4,962
85	3,876
80	3,363
75	2,762
70	2,506
65	2,226
60	1,940
55	1,732
50	1,492
45	1,309
40	1,168
35	1,035
30	952
25	702
20	552
15	409
10	234
5	9
0	0

institutions; that 75 per cent. have endowments in excess of $702; that only 5 per cent. exceed $8,071, etc. It also affords an interesting comparison with the mean which, in Table I, was reported as $2,357, while the median (fifty percentile) is only $1,492—very much smaller. This is due to the weights from the few very large endowments. In computing the mean, the Harvard endowment, for example, of $19,400 counterbalances that of over twenty institutions in the $500 to $999 group. While half of the institutions exceed the median figure of $1,492, Table II shows that only about one third of them exceed the mean figure of $2,357. Over half of the institutions have endowments of less than $1,500 per student, which at 5 per cent. interest (more than many endowments are now yielding) amounts to less than $75 per student.

ENDOWMENT PER STUDENT CAPACITY

All but a score of the institutions reported not only actual enrolments but also "student capacity," that is, the total number of students an institution is able to accommodate in its daily curriculum schedule. These afford another basis for computing unit endowment. Capacity averages about 15 per cent. greater than enrolment figures, although in a few cases the institutions reported that their enrolments equalled or even exceeded their stated capacities. Probably this was due to the inclusion of extension or evening class enrolments. Tables III and IV summarize actual and percentile distributions on this basis in the same way that Tables I and II do for actual enrolment. They may be thought of as showing potentiality instead of actuality. If all the institutions were filled to capacity, without increase of endowment, what would be the endowment per student? Tables III and IV contain the answer to this question.

TABLE III

DISTRIBUTION OF PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO ENDOWMENT PER STUDENT CAPACITY

Endowment range	Number of institutions
$15,000–$19,999	1
10,000– 14,999	7
9,000– 9,999	3
8,000– 8,999	3
7,000– 7,999	4
6,000– 6,999	5
5,000– 5,999	5
4,000– 4,999	11
3,000– 3,999	31
2,500– 2,999	16
2,000– 2,499	25
1,500– 1,999	46
1,000– 1,499	64
500– 999	70
1– 499	60
0	16

Average (mean) $1,973

Again the marked difference between the mean of $1,973 and the median of $1,283 may be noted. Either figure is approximately 15 per cent. below the corresponding measure of student enrolment, indicating a still lower effective endowment per student if the colleges were filled to their capacities.

TABLE IV

PERCENTILE DISTRIBUTION OF PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO ENDOWMENT PER STUDENT CAPACITY

Percentile	Endowment
100	$15,040
95	7,000
90	4,022
85	3,335
80	2,788
75	2,398
70	2,000
65	1,767
60	1,600
55	1,412
50	1,283
45	1,143
40	1,000
35	860
30	750
25	608
20	443
15	332
10	220
5	6
0	0

TABLE V

DISTRIBUTION OF PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO ENDOWMENT PER FACULTY MEMBER

Endowment range	Number of institutions
$100,000–$199,999	7
90,000– 99,999	4
80,000– 89,999	6
70,000– 19,999	8
60,000– 69,999	4
50,000– 59,999	11
45,000– 49,999	13
40,000– 44,999	21
35,000– 39,999	14
30,000– 34,999	27
25,000– 29,999	25
20,000– 24,999	39
15,000– 19,999	56
10,000– 14,999	44
5,000– 9,999	56
1– 4,999	33
0	18
Average (mean)	$25,057

ENDOWMENT PER FACULTY MEMBER

In the typical institution of higher education faculty salaries absorb about two thirds of the total current operating budget. Income from endowment is largely used for paying these salaries. There may be a material increase in student body, 15 per cent. or even more, without a corresponding increase in number of faculty. Faculty members as listed, too, are more likely to be on a full-time basis than are students many of whom may have been in attendance for only one quarter or semester. For all these reasons, therefore, it is probably more significant to use endowment per faculty member as a measure of adequacy of invested resources rather than either of the student measures tabulated above. At any rate it will furnish an illuminating supplementary method. A distribution on this basis is given in Table V.

The thirteen institutions having the largest endowments per faculty member, all over $85,000 each, are the following:

Yale University	$188,500
Amherst College	129,100
Clark University*	115,400
Colgate University	111,000
Rice Institute*	101,000
Haverford College	100,000
Bowdoin College*	100,000
University of Chicago*	95,500
University of Rochester	95,200
Duke University	93,700
Swarthmore College	90,400
Harvard University	89,400
Oberlin College	85,100

Nine of these institutions (all except the four starred) were also in the list of institutions with the largest endowment per student enrolled, although the order is somewhat different, Harvard, for example, changing from first place to twelfth.

Table VI gives a percentile distribution of endowment per faculty member.

GEOGRAPHICAL DISTRIBUTION

Marked differences in endowments are found for institutions in different parts of the country. Average endowments on each of the three bases exhibited above are summarized in Table VII for the institutions grouped according to

TABLE VI

PERCENTILE DISTRIBUTION OF PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO ENDOWMENT PER FACULTY MEMBER

Percentile	Endowment
100	$188,511
95	79,310
90	50,886
85	44,131
80	38,462
75	33,333
70	29,452
65	26,000
60	23,174
55	20,362
50	18,476
45	16,684
40	15,568
35	12,786
30	11,389
25	8,929
20	7,636
15	5,870
10	3,233
5	105
0	0

the nine geographical divisions recognized by the U. S. Census Bureau. The arrangement is according to endowment per faculty member, probably the most significant figure.

The average financial superiority and stability of the group of New England institutions is outstanding. Their endowment is over five times as great on a student basis and almost four times as great on a faculty basis as it is for the institutions in the mountain states. It is about twice as great on either basis as in the adjoining Middle Atlantic states, which make the next best showing. These facts reflect, at least in part, the greater age of the institutions on the Atlantic seaboard, which in some cases have had two or three centuries in which to accumulate endowments.

AGE OF INSTITUTIONS

To investigate the relation of age to endowment the institutions were arranged in six groups involving quarter-century intervals (except for the first group) according to date of

TABLE VII

AVERAGE ENDOWMENT PER STUDENT AND PER FACULTY MEMBER FOR PRIVATELY CONTROLLED INSTITUTIONS LOCATED IN NINE GEOGRAPHICAL AREAS

Area	Number of institutions	Per student enrolled	Per student capacity	Per faculty member
New England (Me., N. H., Vt., Mass., R. I., Conn.)	26	$6,213	$4,996	$53,157
Middle Atlantic (N. Y., N. J., Penn.)	63	3,131	3,126	27,388
East South Central (Ky., Tenn., Ala., Miss.)	33	1,840	1,661	26,398
East North Central (Ohio, Ind., Ill., Mich., Wis.)	78	2,197	1,810	26,378
Pacific (Wash., Ore., Calif.)	21	2,057	1,734	22,810
West North Central (Minn., Iowa, Mo., N. D., S. D., Neb., Kan.)	63	1,667	1,278	20,875
South Atlantic (Del., Md., D. C., Va., W. Va., N. C., S. C., Ga., Fla.)	66	1,875	1,511	19,897
West South Central (Ark., La., Okla., Texas)	29	1,188	1,050	16,049
Mountain	7	1,168	997	14,192

founding. A summary of average endowments from this standpoint is given in Table VIII.

TABLE VIII

AVERAGE ENDOWMENT PER STUDENT AND PER FACULTY MEMBER FOR PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO DATE OF FOUNDING

Date of founding	Number of institutions	Per student enrolled	Per faculty member
1636–1799	25	$4,150	$40,155
1800–1824	13	5,961	61,373
1825–1849	82	2,596	28,168
1850–1874	99	2,113	23,905
1875–1899	112	1,916	22,204
1900–1932	54	1,619	13,063

In the institutions founded a century or more ago the present endowments, measured either on a student or a faculty unit basis, are three or four times as great as for the institutions founded only recently. With the exception of the second group (1800–1824) of institutions, the amount decreases by distinct differences for each quarter-century interval. The small group of 13 institutions in the first quarter of the nineteenth century includes such well-established institutions as Amherst, Colgate, Hamilton, Trinity and Middlebury, each with a total endowment from $2,000,000 to $10,000,000, and includes only a single institution with an endowment of less than one million; while the earlier group of seventeenth and eighteenth century institutions, although it includes Harvard and Yale, also includes nine whose present endowments are less than $1,000,000 each, thus bringing down the average materially. If the first two groups are combined to make a single group of 38 institutions (still fewer than any of the other groups) the average endowment per student is $4,770, per faculty member, $47,414, and the general trend is even more clearly evident. The twentieth century institutions include two with unusually large endowments in proportion to enrolment, Bennington (1932) with $1,250,000, or $15,600 per student and $41,700 per faculty member; and William Smith (1908) with $1,966,000, or $16,200 per student and $48,000 per faculty member. Had these two exceptional cases been excluded from the last group of 54 institutions, the average endowment for those remaining would be only $1,069 per student and $11,865 per faculty member.

DENOMINATIONAL CONTROL

Two thirds of the institutions are reported as under denominational control. Another sixth are reported as non-sectarian but under distinct denominational affiliation, influences or historical antecedents.[5] A final sixth are strictly non-sectarian, with no denominational connection or control. A summary of average endowments for the different denominational groups is given in Table IX. All six of the denominational groups of the "affiliation or influence" type have distinctly larger endowments per faculty member than any of the large groups of institutions under denominational "control" which make up two thirds of the total number. They average over twice as great endowment per student or per faculty member. The strongest institutions, financially, are those under denominational influence but not under denominational control.

TABLE IX

AVERAGE ENDOWMENT PER STUDENT AND PER FACULTY MEMBER FOR INSTITUTIONS GROUPED ON A DENOMINATIONAL BASIS

	Number of institutions	Endowment per student	Endowment per faculty
Under denominational control:	**256**	**$1,676**	**$20,192**
Presbyterian	53	1,872	24,910
Friends	9	2,718	23,899
Baptist	44	1,871	23,103
Methodist Episcopal	41	1,704	22,720
Methodist Epis., South	25	2,021	19,587
Disciples	11	1,529	18,795
Moravian	3	2,202	17,307
Miscellaneous (ten denominations)	13	1,550	16,295
Lutheran	23	1,248	15,350
Evangelical	3	1,031	14,922
Brethren	10	1,104	13,752
Reformed	9	877	12,360
Congregational	3	1,040	10,353
Methodist Protestant	3	888	9,816
Mennonite	3	650	7,432
Nazarene	3	204	3,011
Non-sectarian, but under denominational affiliation or influence:	**62**	**4,064**	**42,987**
Episcopal	3	6,992	66,178
Baptist	6	3,977	54,610
Congregational	31	4,598	46,281
Miscellaneous (five denominations)	6	3,368	38,177
Presbyterian	9	3,197	33,238
Methodist Episcopal	7	2,227	25,242
Non-sectarian, no denominational connection:	**68**	**3,293**	**27,056**

[5] The "College Blue Book," supplemented by the "Christian Education Handbook" for 1931 (Council of Church Boards of Education, New York, January, 1931), were used to determine the denominational classification of this group of institutions.

ENDOWMENT AND TUITION

Since the chief sources of income for non-tax-supported institutions are interest on endowment and student tuition and fees, it might be supposed that the institutions with relatively small endowments would make up the difference by charging larger student fees than the more heavily endowed institutions. To test this supposition, the institutions were arranged in order according to endowment per faculty member from the largest to the smallest and divided into four equal groups, the average tuition and fees per student being computed for each group. The results were as follows:

Quarter with largest endowment, average tuition and fees	$270
Quarter with next largest endowment, average tuition and fees	215
Quarter with next largest endowment, average tuition and fees	204
Quarter with smallest endowment, average tuition and fees	185

The facts are thus quite at variance with the stated hypothesis. The more heavily endowed institutions tend also to charge the greater fees. The eighteen institutions with no endowment whatever have an average tuition charge even lower, only $177.

ENDOWMENT AND SEX

A summary for the institutions classified in three groups according to sex of students admitted is given in Table X.

The men's colleges are more than twice as heavily endowed either on a student or on a faculty basis as the women's colleges or as those of the coeducational type. This is due in part, of course, to the greater age of the institutions for men, the median date of their founding being 1826, while that for the women's institutions is 1873, and for the coeducational institutions 1870.

TABLE X

AVERAGE ENDOWMENT PER STUDENT AND PER FACULTY MEMBER FOR PRIVATELY CONTROLLED INSTITUTIONS ACCORDING TO SEX OF STUDENTS ADMITTED

	Number of institutions	Endowment per student	Endowment per faculty member
Men's colleges	41	$5,376	$53,763
Women's colleges	67	2,637	19,094
Coeducational colleges	278	1,835	23,302

MINIMUM ENDOWMENT

The information summarized in various forms above gives a rather complete picture of what college and university endowments are, but it furnishes no direct evidence as to what they should be. They are norms, not standards. No absolute standards can be given. The consensus of opinion of many college leaders, however, has set certain minimum standards in the way of endowment. These deserve consideration in the light of the information presented above.

The American Council on Education, the most representative and influential national organization in the field of higher education, in its statement of minimum standards for colleges, adopted in 1922, says that a college should have a minimum annual income of $50,000, "of which not less than $25,000 should be derived from stable sources, other than students, preferably from permanent endowments."[6] Capitalized at 5 per cent., $25,000 is equivalent to an endowment of $500,000. Other parts of the statement indicate a minimum enrolment of 100 students and eight professors, with the qualification that "increase in faculty, student body, and scope of instruction should be accompanied by increase in income from endowment." These figures lead to a recommended minimum endowment per student of $5,000 and of $62,500 per faculty member.

Essentially the same statement is made by the Association of American Universities, the Association of Colleges and Secondary Schools of the Middle States, the Southern Association and the Northwest Association.[7] The North Central Association formerly recommended an endowment of $500,000 for a college of 200 students, (equivalent to $2,500 per student and $31,250 per faculty member), but this standard has been

[6] E. B. Ratcliffe, "Accredited Higher Institutions," U. S. Office of Education, *Bulletin* No. 19, p. 6, 1930.

[7] *Ibid.*, pp. 10, 14, 16, 28.

abandoned in their recent revision of accrediting procedures.

As a matter of fact, however, under present conditions not nearly all the income "from stable sources, other than students" comes from endowments. The volume already referred to shows that 41 per cent. of the income of privately controlled institutions comes from student fees, 43 per cent. from "private sources" and 16 per cent. from "other sources." The 43 per cent. is divided into 21 per cent. from gifts and 22 per cent. from endowments.[8] This indicates, therefore, that only about half of the desirable income from "sources other than students, preferably from permanent endowments" actually comes from such endowments. Thus, while an endowment of $5,000 per student or of $62,500 per faculty member may be the ideal minimum, practical considerations of experience in the recent past point to approximately half of these figures as more reasonable present minimum criteria—with the hope that the remainder may be made up by private benefactions for current expenses. Unfortunately, this source has also shown alarming shrinkage in the past three or four years.

An examination of Table II or Table VI shows that less than 10 per cent. of the colleges reach the suggested minimum standard of $5,000 per student or of $62,500 per faculty member. Even if only half of these figures be taken, 70 per cent. fail to reach it. The recommended minimum is approximated only by the New England group of colleges (Table VII); by the institutions under the influence of the Episcopal and Congregational churches (Table IX); or by the colleges for men (Table X). Table VIII indicates that only institutions which have maintained their existence for over a century have secured, on the average, such a recommended minimum endowment.

Under the present conditions of financial stress and reorganization the question may be raised whether there are not far too many inadequately financed institutions trying ineffectually to do the standard work of the four-year college. Already some of those listed in the "College Blue Book," especially those with little or no endowment, have succumbed to the inevitable and vanished from the educational landscape. Perhaps a further increase in the number of college funerals would improve the higher educational atmosphere.

Death from mal-nutrition, however, is doubtless too severe a prescription in many cases. Many of these institutions could advantageously consider the advisability of eliminating the highly differentiated and relatively expensive specialization of the junior and senior years, and of becoming instead more efficient and better financed junior colleges. This is no novel suggestion. It was made a third of a century ago by that educational prophet and statesman, President William Rainey Harper, of the University of Chicago, who recommended that approximately 200 of the smaller colleges existing at that time ought to become junior colleges and another 100 ought to give up college work entirely.[9]

A similar recommendation was made by the U. S. Commissioner of Education, P. P. Claxton, twenty years later, when as a result of a statistical analysis of the incomes of over 500 colleges, he wrote:[10]

> Here is the opportunity for the junior college and for a very important economy in college organization. Practically all of the 307 colleges having incomes of less than $50,000 to $100,000 should cease to try to do more than two or three years of college work—preferably only two years—and should concentrate all their means of money and men on doing well the work of these two years. . . . No school should lose any of its dignity or worthiness of support by confining its work to the first two college years. On the other hand both dignity and worthiness will be increased if they do the work of these two years in a better and larger way, such as this change would make possible.

The remarkable development of the junior college in the past decade is one of the most significant phenomena of higher education in America. Even in the stress and strain of the years of depression it has continued to develop with surprising vigor. Many of the existing

[8] Lindsay and Holland, *op. cit.*, p. 55.

[9] W. R. Harper, "The Small College—Its Prospects," in *Proceedings of the National Education Association*, Charleston, S. C., 67–87, 1900.

[10] P. P. Claxton, "The Better Organization of Higher Education in the United States," U. S. Bureau of Education, *Bulletin* No. 19, pp. 23–24, 1922.

privately controlled junior colleges are ones that were formerly struggling and inefficient four-year colleges. They have followed the advice of President Harper and of Commissioner Claxton and have attained by the transformation added "dignity and worthiness"—usefulness to society and assured permanence and stability. The increasing stress and strain in the financing of higher education and the demonstrated inadequacy of endowment of many of the existing four-year institutions, as set forth in detail above, suggest the desirability of serious consideration on the part of college executives and trustees of the sound counsel of Harper and Claxton and other more recent educational statesmen who have written and spoken in the same vein.

AN ADEQUATE ENDOWMENT

The recommendations of the American Council on Education were directed only toward an attempted definition of a minimum acceptable college, not of a really adequate and efficient institution. The best detailed study of the constitution of an efficient college has been made by President D. J. Cowling, of Carleton College.[11] He assumes an enrolment of 1,000 students in a "four-year college of liberal arts that shall represent, (without extravagance) all the essential features of a college of first rank." He assumes a faculty of 84 members, of whom 33 are full professors with average salaries of $5,000 (varying from $4,200 to $6,000), 17 are associate professors, 17 are assistant professors and 17 are instructors with average salaries of $2,000 ($1,800 to $2,400). Tuition is to be $250 per student, and salaries are to constitute 62 per cent. of the current educational expenditures. To meet these assumptions he calculates a necessary endowment, at 5 per cent. interest, of $8,417,350, which amounts to $8,417 per student or $100,206 per faculty member.

Judged by these standards (and a careful study of President Cowling's plan shows little evidence of extravagance), very few American institutions of higher learning have sufficient endowment to qualify as really "effective" colleges. Only eighteen are found which have an endowment of over $8,417 per student, while only seven have an endowment of more than $100,000 per faculty member, and some of these are universities with relatively expensive graduate work which would doubtless require an increase in endowment over the four-year liberal arts college assumed by President Cowling.

Another detailed study has been made by Guy E. Snavely, president of Birmingham-Southern College and for many years secretary of the Southern Association of Colleges and Secondary Schools, who outlined the requirements for the "ideal standard college," assuming 600 students, 40 instructors and an average salary of $3,400 for professors and $2,000 for instructors, with a current expense budget of $200,000 per year.[12] He estimates an income from student tuition, at $125 each, of $75,000, conference contributions and other donations of $20,000 (which he "realizes is put rather high") and interest on endowment of $105,000. He recommends an endowment of "at least $2,000,000." This amounts to $3,333 per student or $50,000 per faculty member. Tables II and VI indicate that only 20 per cent. of existing institutions meet this student standard, and only a little over 10 per cent. meet the faculty standard.

These seem to be additional eloquent reasons why many existing colleges, especially of the denominational type, should consider extinction, reduction to junior college status or consolidation with neighboring institutions.

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[11] D. J. Cowling, "An Analysis of the Financial Needs of a College of Liberal Arts for One Thousand Students," in "The Effective College" (R. L. Kelly, editor), Association of American Colleges, New York, pp. 231–43, 1928.

[12] G. E. Snavely, "A Standard Liberal Arts College," SCHOOL AND SOCIETY, xxi: 701–04, June 13, 1925.

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